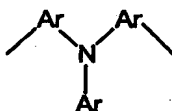


Claims

- 1) An electroluminescent device comprising:
- a first electrode for injection of positive charge carriers;
 - a second electrode for injection of negative charge carriers; and
 - an electroluminescent layer located between the first and second electrodes comprising a host material and a metal complex,

wherein the host material comprises a polymer having a first repeat unit of formula (I):



(I)

- wherein each Ar is the same or different and independently represents an optionally substituted aryl or heteroaryl and any two Ar groups may be directly linked by a single bond.
- 2) An electroluminescent device according to claim 1 wherein the polymer is a copolymer comprising a second repeat unit.
- 3) An electroluminescent device according to claim 2 wherein the second repeat unit is at least partially non-conjugated.
- 4) An electroluminescent device according to claim 3 wherein the second repeat unit is selected from repeat units of formulae (II) and (III):



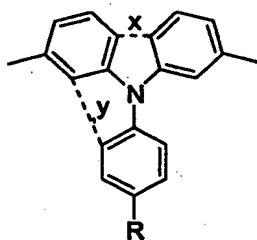
(II)



(III)

wherein R^4 and R^5 are independently selected from hydrogen or a substituent; n is from 1-10; and Ar^1 and Ar^2 are independently selected from optionally substituted aryl or heteroaryl.

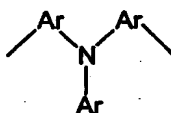
- 5) An electroluminescent device according to claim 4 wherein each R^4 and R^5 is independently selected from hydrogen or C_{1-10} alkyl; n is 1 or 2; and each Ar^1 and Ar^2 is phenyl.
- 6) An electroluminescent device according to claim 2 wherein the second repeat unit is fully conjugated along its backbone and is conjugated directly to Ar^1 of the first repeat unit.
- 7) An electroluminescent device according to claim 6 wherein the second repeat unit is selected from optionally substituted fluorene, spirofluorene, indenofluorene, phenylene and oligo-phenylene.
- 8) An electroluminescent device according to any one of claims 2-7 wherein the co-polymer is an AB co-polymer.
- 9) An electroluminescent device according to any preceding claim wherein none of the Ar groups of the first repeat unit are directly linked by a single bond.
- 10) An electroluminescent device according to any one of claims 1-8 wherein the first repeat unit comprises an optionally substituted repeat unit of formula (IV):



(IV)

wherein R is hydrogen or a substituent and one of x and y is present as a single bond.

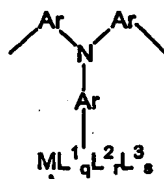
- 11) An electroluminescent device according to any preceding claim wherein the metal complex is chemically bound to the polymer as a substituent attached to the polymer main chain or incorporated into the polymer main chain.
- 12) An electroluminescent device according to claim 11 wherein the metal complex is provided as a repeat unit within the polymer.
- 13) An electroluminescent device according to claim 12 wherein the metal complex is provided as an end-group of the polymer.
- 14) An electroluminescent device according to any preceding claim wherein the metal complex is electrophosphorescent.
- 15) A composition comprising a metal complex and a polymer as defined in any one of claims 1-10.
- 16) An electroluminescent polymer comprising a repeat unit of formula (I) and a metal complex bound to the polymer as a substituent attached to the polymer main chain or incorporated into the polymer main chain:



(I)

wherein each Ar is the same or different and independently represents an optionally substituted aryl or heteroaryl and any two Ar groups may be directly linked by a single bond.

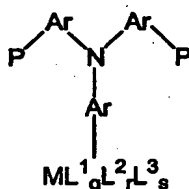
- 17) An electroluminescent polymer according to claim 16 wherein the metal complex is bound directly to the repeat unit of formula (I).
- 18) An electroluminescent polymer according to claim 17 comprising a repeat unit of formula (XII):



(XII)

wherein M is a metal; each of L^1 , L^2 and L^3 is a coordinating group; q is an integer; r and s are each independently 0 or an integer; and the sum of (a. q) + (b. r) + (c. s) is equal to the number of coordination sites available on M, wherein a is the number of coordination sites on L^1 , b is the number of coordination sites on L^2 and c is the number of coordination sites on L^3 .

- 19) An electroluminescent polymer according to claim 16 wherein the metal complex is phosphorescent.
- 20) A monomer of formula (XIII):



(XIII)

wherein each Ar is the same or different and independently represents an optionally substituted aryl or heteroaryl; any two Ar groups may be directly linked by a single bond; M is a metal; each of L^1 , L^2 and L^3 is a coordinating group; q is an integer; r and s are each independently 0 or an integer; the sum of (a. q) + (b. r) + (c. s) is equal to the number of coordination sites available on M, wherein a is the number of coordination sites on L^1 , b is the number of coordination sites on L^2 and c is the number of coordination sites on L^3 ; and each P is the same or different and is a polymerisable group.

- 21) A monomer according to claim 20 wherein each P is independently selected from boronic acid, boronic ester, borane or halogen.